

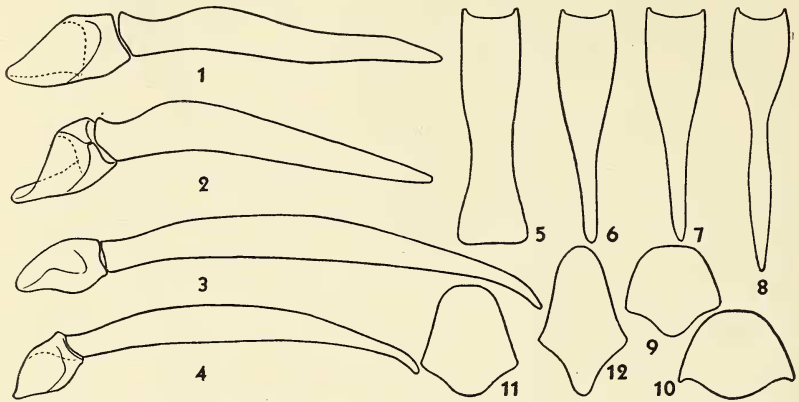
**A PRELIMINARY REVIEW OF THE NORTH AMERICAN SPECIES OF DENDROPHILUS (COLEOPTERA, HISTERIDAE).**

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The holarctic genus *Dendrophilus* Leach consists of a small number of species which are often incorrectly distinguished by external characters. The writer's examination of the male terminalia of the majority of the known species has revealed some useful characters for separating as well as relating our North American species. These characters which correlate with certain external features place these species into two groups; the first consisting of *punctatus* Herbst (= *punctulatus* Say, *sexstriatus* Hatch) and *tularensis* Ross, the second consisting of *californicus* Horn and the new species described herein.

A KEY TO THE NORTH AMERICAN SPECIES OF DENDROPHILUS.

- 1. Pygidium very finely and densely punctate, punctures indistinct, shallow. Male: Aedeagus stout, not curved ventrad apically; basal-piece large. (figs. 1 and 2) .....2.
- Pygidium much more coarsely and sparsely punctate, punctures clearly defined, deep. Male: Aedeagus slender, apex curved ventrad; basal-piece small. (figs. 3 and 4) ....3.
- 2. Elongate; surface feebly convex. Fifth and sutural striae of elytra traceable by series of punctures to base. Male: Aedeagus (fig. 2) not sinuate; ninth sternite (fig. 6) narrowed basally. California .....(2) *californicus*
- Short; surface strongly convex. Fifth and sutural striae of elytra obsolete in basal half. Male: Aedeagus (fig. 1) sinuate; ninth sternite (fig. 5) as broad at base as at apex. South Carolina .....(1) *opacus* n. sp.
- 3. Surface strongly, evenly punctate throughout. Fifth and sutural striae of elytra distinctly impressed in entire basal half. Male: Tenth tergite (fig. 11) broadly rounded on both apical and basal margins. California  
(3) *tularensis*
- Surface less strongly, unevenly punctate; punctures of elytra decreasing in size and density in basal half, particularly in sutural area. Fifth and sutural striae of elytra obsolete or represented only by punctures in basal half. Male: Tenth tergite (fig. 12) narrowly rounded apically; acutely angulate basally .....(4) *punctatus*



EXPLANATION OF FIGURES: 1. Aedeagus of *Dendrophilus opacus* n. sp. (lateral aspect), 2. *D. californicus* Horn, 3. *D. tularensis* Ross, 4. *D. punctatus* Herbst; 5. ninth sternite (male) of *D. opacus*, 6. *D. californicus*, 7. *D. tularensis*, 8. *D. punctatus*; 9. tenth tergite (male) of *D. opacus*, 10. *D. californicus*, 11. *D. tularensis*, 12. *D. punctatus*. All drawings camera lucida 30 $\times$ .

(1) *Dendrophilus opacus* n. sp.

Broadly oval, convex; black, opaque. *Head* finely and evenly punctate. *Pronotum* twice as wide at base as median length; sides rather strongly convergent, evenly but weakly arcuate from base to apex, not abruptly rounded at apical angles; basal margins very feebly arcuate, uniting medially to form a broad, blunt, obtuse angle; ante-scutellar impression very shallow, indistinct; entire surface evenly punctate, punctures small, deep, interspaces two to three times their diameters, these spaces finely but distinctly alutaceous with occasional micropunctures. *Elytra* with outer marginal stria distinct, entire, nearly uniting with the deeply grooved inner marginal stria of epipleura both at the base and the apex; inner and oblique humeral striae both subobsolete; first four discal striae prominent, abbreviated at apical fifth, becoming progressively shorter towards suture; fifth and sutural striae represented in median third only, fifth traceable by a series of punctures to base; punctuation moderate, denser at sides and apex; interspaces finely, distinctly alutaceous. *Pygidium* large, nearly flat; strongly alutaceous; punctures of small size, very numerous, dense, separated by interspaces of less extent than their diameters; apex flat, with much finer punctuation. *Male terminalia*: *Ninth sternite* (fig. 5) broad throughout,

base slightly wider than apex; sides constricted medially. *Tenth tergite* (fig. 9) broad, sides weakly convergent; apex broadly rounded, truncate; basal margins weakly emarginate, meeting to form a blunt ninety-degree angle. *Aedeagus* (fig. 1) stout, short, sinuate (lateral aspect), apices of lateral lobes not curved ventrad; basal-piece very large. *Length* 3.5 mm., *width* 2.75 mm.

*Holotype*, male (U.S.N.M.) and six paratypes (one male and five females) collected in a nest of the Florida Wood Rat on Seabrook's Island, South Carolina, May 25, 1934, by Mr. O. L. Cartwright who very kindly sent the specimens to me for determination.

Two additional specimens at hand, both females, which appear to represent this species are labeled "N. Ill." (= Northern Illinois ?) and are from the C. W. Leng collection. These are not designated paratypes, however, in the absence of males in the series. If these are indeed *opacus* the known range of the species would be considerably extended.

The paratypes are deposited as follows: two in the collection of Mr. O. L. Cartwright, one in that of Mr. R. L. Wenzel, another in the California Academy of Sciences and the remaining two, a pair, in the writer's collection.

Secondary to the striking genitalic characters (which are inconvenient to use), this species may be readily separated from *punctatus* by its large, nearly flat, more finely and closely punctate pygidium (which is much like that of *pygmaeus* L., a European species); otherwise, except for the uniformly larger size of *opacus*, the two are very similar in appearance. *Opacus* is most closely related to *californicus* Horn, by both genitalic and pygidial characters but it can be distinguished from the latter by its more robust form, obsolete fifth and sutural elytral striae and the genitalic characters as illustrated.

(2) *Dendrophilus californicus* Horn

*Dendrophilus californicus* Horn, 1892, Trans. Amer. Ent. Soc., 19: 46; Ross, 1937, Pan. Pac. Ent., 13: 68; Hatch, 1938, Journ. Kans. Ent. Soc., 11: 19 (key).

At the time of my earlier studies in this genus I had not as yet investigated genitalic characters and as a result partially misidentified a series of western *Dendrophilus* as *californicus* (Pan. Pac. Ent., 13: 68). With one exception, the specimen from Stockton, California, this series really represents another form which I am now assigning to *punctatus* Herbst. This example from Stockton collected by Dr. F. E. Blaisdell April 15, 1932 which seemed to fit

Horn's description of *californicus* well, was sent to Mr. Mark Robinson of Philadelphia to be compared with the type. Mr. Robinson's reply stated that the specimen was "an exact duplicate of the type of *californicus*."

The description of this homotype, a male, is given as follows:

Elongate-oval, convex; color dark rufous; surface finely, unevenly punctate. *Head* finely, evenly punctate throughout. *Pronotum* less than twice as wide at base as median length; sides very feebly arcuate, abruptly rounded near apical angles; basal margins nearly straight, converging at scutellum to form a broad obtuse angle; ante-scutellar impression prominent broad, shallow; punctuation fine, sparse medially, interspaces three to four times the diameters of punctures, these interspaces faintly alutaceous with occasional micro-punctures, punctuation somewhat coarser and denser laterally. *Elytra* with outer marginal stria sinuate, almost uniting with the deeply grooved, entire inner marginal striae of epipleura both at base and at apex; humeral striae obsolete, represented by but faint median impressions; oblique humerals not prominent; first four discal striae of each elytron extending from base of elytra and terminating at apical sixth, punctate; fifth and sutural striae represented in basal half by prominent but uneven punctures; punctuation baso-medially similar to that of the discal area of the pronotum, laterally and apically the punctures become larger and more dense; punctuation of epipleura coarse, shallow, dense but not confluent; interspaces of punctures very faintly alutaceous with occasional micro-punctures which are particularly noticeable in the sutural area. *Pygidium* large, nearly flat; punctures uniformly small, shallow and dense, separated by alutaceous interspaces slightly less in extent than their diameters; apex rounded, punctures extremely fine, interspaces polished. *Male terminalia*: *Ninth sternite* (fig. 6) broad at apex, sides evenly convergent, base narrow. *Tenth tergite* (fig. 10) broad; sides gradually convergent, feebly arcuate; apical margin truncate; basal margin broadly arcuate. *Aedeagus* (fig. 2) stout, short; apex of fused parameres not curved ventrad; basal-piece large. Length 3.75 mm., width 2.75 mm.

*Type locality*: Santa Clara Co., Calif.

*Homotype locality*: Stockton, Calif., April 15, 1932 (F. E. Blaisdell).

As stated before, *californicus* seems to be definitely related to *opacus* from South Carolina and not at all closely to the other

species known from California; *punctatus* Herbst and *tularensis* Ross.

The elytra of this specimen of *californicus* do not appear dull at their apices, a character which has been used to separate it from others species; the pygidial and genitalic characters are much more useful for this purpose.

(3) *Dendrophilus tularensis* Ross.

*Dendrophilus tularensis* Ross, 1937, Pan. Pac. Ent.,  
13: 67.

This species can be recognized immediately by its uniform, coarse elytral punctuation and by its deeply impressed, basally-entire fifth and sutural striae of the elytra.

An examination of the terminalia of the holotype of this species, a male, indicates a relationship with *punctatus* by the nature of the aedeagus (fig. 3) and ninth sternite (fig. 7) but the tenth tergite (fig. 11) seems to be intermediate in form to that of *californicus* (fig. 10) and *opacus* (fig. 9).

*Type locality*: Kaweah, Tulare Co., Calif.

(4) *Dendrophilus punctatus* Herbst

= *Dendrophilus punctulatus* Say, fide Hatch, 1938, Journ.  
Kans. Ent. Soc., 11: 20.

= *Dendrophilus sexstriatus* Hatch, 1938, Journ. Kans.  
Ent. Soc., 11: 18, fide Wenzel, 1939, in litt.

Series of specimens of the European *punctatus* and the American "*punctulatus*" seem to be inseparable by either external or genitalic characters.

Mr. R. L. Wenzel who has examined the holotype and the paratype of *sexstriatus* Hatch, which are from Iowa, states (in a letter to me) that this species is based upon variants of *punctatus* and should therefore be regarded as a synonym of it.

The typical *punctatus* has the elytra about as equally punctate in the basal half as at the apex and the fifth and sutural striae of the elytra are obsolete. But, occasionally within the eastern range of the species appear individuals (*sexstriatus* of Hatch) which are slightly smaller in size which have their elytral punctuation abruptly finer and sparser in the basal half of the elytra, and their fifth and sutural elytral striae traceable to their bases by rows of punctures. According to Wenzel (in litt.), a gradual intergradation can be seen between these two types in any large series of *punctatus*.

The series previously referred to from the Pacific Coast is, however, uniformly of this latter unequal-punctate six-striate type and

no specimens of the typical *punctatus* are present. However, no significant male genitalic differences seem to prevail between it and *punctatus*.

Although there seems to be some need for at least a subspecific ranking for this Pacific Coast series, I have, with some hesitation, finally decided to refer these specimens to *punctatus* for the present, as they are inseparable from the eastern variants of *punctatus*.

*North American records*:—BRITISH COLUMBIA: 3, Vancouver, March 2, 1927, "in a culture of *Tenebrio* etc. in bran" (H. B. Leech). CALIFORNIA: 12, San Francisco, Aug. 7, 1906, "rotting vegetation"; 1, Tuolumne Co., July 15, 1910; (E. C. Van Dyke). CONNECTICUT: 1, Hartford; 1, Lyme, May 8, 1915, (W. S. Fisher); (U.S.N.M.\*). DISTRICT OF COLUMBIA: Washington; 2, (Leng Coll.); 3, (Hubbard and Schwarz Coll.); 1, 1896 "in sweepings from feed store"; (U.S.N.M.). IOWA: 1, Monroe Co., April 21, 1930 (H. Knight); 1, Mt. Pleasant, Feb. 26, 1931 (Hagedun); (Types of *sexstriatus*). KANSAS: 1, Abilene, June 28, 1931, "dead in basement of flour mill"; 1, Salina, Aug. 28, 1934, "dead in basement of flour mill"; 6, Topeka (Popenoe); (U.S.N.M.). LOUISIANA: 1, "La.", March 20, 1938 "nest of Ivory-billed Woodpecker" (A. P. Jacot); (U.S.N.M.). MARYLAND: 1, Kenilworth, May 21, 1906, "in flour mill"; 1, Rockville, July 21, 1931, "in flour mill"; 1, Sandy Springs, June 23, 1931, "in waste grain in mill"; (U.S.N.M.). MASSACHUSETTS: 1, Chatham, June 26, 1919, (E. R. Leach). NEW JERSEY: 1, Wildwood, Oct. 26, 1932; 1, Haddon Hts., April 25, 1932; (L. J. Bottimer). NEW YORK: 1, Dunden, (Hubbard and Schwarz Coll.), (U.S.N.M.); 1, Lewiston; 1, Rockaway Bch., L. I.; 1, Long Isle; 1, Westchester Co.; 2, "N. Y."; (C. W. Leng Coll.). OREGON: 1, McMinnville, May 7, 1937, (K. M. Fender). PENNSYLVANIA: 2, Philadelphia, (Popenoe); (U.S.N.M.).

The fact that this species has been frequently collected in flour mills, etc., as the above records show, indicates that the species may often be a predator of certain granary insects. If this proves to be the case, the fact that *punctatus* occurs both in Europe and America could be explained on the basis of an introduction by man in commerce.

I wish to acknowledge the assistance of Mr. R. L. Wenzel, Mr. O. L. Cartwright, Mr. Mark Robinson, Dr. F. E. Blaisdell and Dr. E. C. Van Dyke in the preparation of this paper.

\* The included U. S. National Museum records were kindly furnished me by Mr. R. L. Wenzel.